

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/DK2004/000614

International filing date (day/month/year)
16.09.2004

Priority date (day/month/year)
10.10.2003

International Patent Classification (IPC) or both national classification and IPC
H04R25/00

Applicant
OTICON A/S

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Fülöp, I

Telephone No. +31 70 340-1963



**WRITTEN OPINION OF THE
 INTERNATIONAL SEARCHING AUTHORITY**

International application No.
 PCT/DK2004/000614

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/DK2004/000614

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-7,9
	No: Claims	1,8
Inventive step (IS)	Yes: Claims	2-7,9
	No: Claims	1,8
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:

D1: DE 101 45 994 A1 (SIEMENS AUDIOLOGISCHE TECHNIK GMBH) 17 April 2003 (2003-04-17)

D2: US-A-5 396 560 (ARCOS ET AL) 7 March 1995 (1995-03-07)

1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claims 1 and 8** is not new in the sense of Article 33(2) PCT.

Document D1, which appears to be the closest prior art document, discloses all the features of independent **claims 1 and 8** (see, especially, paragraphs [0013], [0016], [0018] and [0020].

Claims 1 and 8 infringe thus Article 33(2) PCT.

2. The combination of the features of dependent **claims 2-7 and 9** is neither known from, nor rendered obvious by, the available prior art.

The subject-matter of **claim 2** differs from the method disclosed in document D1 in that "the short term energy in the signals is determined" and "the change in difference over time in the short time energy between the microphone signals is determined".

The subject-matter of **claim 2** is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may therefore be regarded as how to improve the way of recognizing when the casing of a hearing aid has been touched by the user.

The solution to this problem proposed in **claim 2** of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

- document D1 discloses a method in which the duration of / between successive knocks is determined and consequently the signal processing is affected. D1 does not suggest, however, any other way of detecting when a user has touched the hearing aid casing;
- although document D2 discloses the use of short term energy analysis in order to detect when a signal has reached the input microphone, there is no hint as to use this method in a combination of microphones nor is D2 suggesting the use of this method in order to solve the above mentioned problem.

Claims 3-7 and 9 are either dependent on claim 2 or corresponding to previous claims dependent on claim 2. Therefore, **claims 3-7 and 9** also meet the requirements of the PCT with respect to novelty and inventive step.